

**CLAIMS**

1. A system comprising a digital communication network for data transmission, comprising audio type data, between a master module and a plurality of slave modules, each module comprising at least one network terminal to connect the communication network to the module, at least one network terminal of a slave module being connected to a network terminal of another module by means of the communication network, a system wherein the master module comprises a synchronization clock and supplies data frames comprising synchronization information on its network terminal, each slave module comprising clock reconstitution means, from the synchronization information of the data frames received on its network terminal, and recognition means, synchronized by the associated clock reconstitution means, to recognize the data intended for said slave module so as to ensure synchronous transmission of the data within the system.
2. The system according to claim 1, wherein a data frame comprises at least one packet, each packet comprising a header with a descriptor of the type and number of data contained in the packet, a module comprising means for determining, from the descriptor, whether a part of the packet is intended for it.
3. The system according to claim 2, wherein a slave module comprises means for inserting data to be retransmitted over the network in a predetermined part of a packet.
4. The system according to claim 1, wherein a data frame comprises command data intended for a slave module comprising means for applying the command data to an input or an output of the slave module.
5. The system according to claim 1, wherein each module is associated to a single address and a data frame comprises a preamble, a destination address, a source address, and the data to be transmitted from the module associated to the source address to the module associated to the destination address.
6. The system according to claim 5, wherein the master module supplies as destination address a broadcast address to transmit data simultaneously to all the slave modules.

7. The system according to claim 5, wherein the master module supplies as destination address a multicast address to transmit data simultaneously to a predetermined group of slave modules.

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8. The system according to claim 1, wherein a data frame comprises a header specific to the application comprising a clock incrementation field incremented each time a frame is transmitted by the master module.

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9. The system according to claim 1, wherein the synchronization clock has a frequency that is not a sub-multiple of the data sampling frequency.

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10. The system according to claim 1, wherein the communication network comprises chain-connected modules, a first network terminal of at least one of the modules being connected to a second network terminal of a first slave module comprising a first network terminal, itself connected to a second network terminal of a slave module that is connected in series with the first slave module.

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11. The system according to claim 1, wherein the communication network comprises star-connected modules, a network terminal of at least one of the modules being connected, by means of a switching unit, to a network terminal of at least two slave modules.

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12. The system according to claim 1, wherein a slave module comprises means for transmitting a frame, without any modification, from one network terminal to another network terminal of said slave module.

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13. The system according to claim 1, wherein the communication network is an Ethernet type network.

14. The system according to claim 1, wherein the communication network is a two-way network.

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15. The system according to claim 1, wherein a module comprises a digital audio input, said module comprising means for transmitting digital audio data

received on its audio input to its network terminal at predetermined data frame locations.

5 16. The system according to claim 1, wherein a module comprises a digital audio output, said module comprising means for synchronization and recognition of the data intended for said output in the data frames received on a network terminal of the module, and means for transmitting said data on its digital audio output.

10 17. The system according to claim 1, wherein a slave module comprises an analog audio output connected to a digital-to-analog converter.

15 18. The system according to claim 17, comprising a loudspeaker connected to the analog audio output of the slave module.

19. The system according to claim 1, wherein a data frame comprises video type data.

20 20. The system according to claim 1, wherein the slave module clock reconstitution means comprise means for minimizing jitter comprising a recursive digital filter arranged up-line from a phase lock loop.